

PROPOSED DISTRICT PLAN
Hearing Stream 2 – Business

MEMORANDUM - WASTE MANAGEMENT NZ LTD (SUBMITTER 461)

Speaking notes, and response to matters requested by the Panel
Angela Goodwin – Planning

27 May 2026

1. Introduction

During Hearing Stream 2, the Panel requested the written notes that I spoke to. The document below is a summary of those notes and the main points addressed. In addition, the Panel requested the rationale for the 200m separation distance from other zones that I suggested as a condition for a proposed permitted activity for waste management facilities in the heavy industrial zone, the Environment Protection Authority Victoria guidance I referred to, and the District Plans I reviewed.

I address each of these matters below. The District Plan heavy industrial activity definitions referred to in my speaking notes are set out in Attachment 1. The Environment Protection Authority Victoria Separation Distance Guideline is provided separately as Attachment 2.

2. 200m separation distance

The document I referred to is the Separation Distance Guideline (Publication 1949) from the Environment Protection Authority Victoria. That document is available at the link below and is provided as Attachment 2.

<https://www.epa.vic.gov.au/separation-distance-guideline>

That document provides guidance on separating industrial activities that may emit odour and/or dust from sensitive land uses. As a guide, it recommends a separation distance of 250m for transfer stations and material recovery and recycling facilities.

The 200m proposed in my evidence is a planning judgement, informed by that guidance but also the operation of the Seaview Transfer Station, including the low number of complaints. To clarify, the inclusion of the 200m is not intended to mean that waste management facilities will have odour or other effects 200m away. Rather, the inclusion of the 200m buffer provides an opportunity for assessment through the consent process where activities are closer to more sensitive zones. The scale of effects is then subject to specific assessment based on the site and proposal.

3. Speaking notes

Note: My notes at the hearing were short-form points. The version below is the full version that captures the material presented.

Definition of heavy industrial activity

I agree with the reporting planner's recommendation for the permitted activity rule that is specific to waste management facilities in the Heavy Industrial Zone, and agree with the additional two clauses proposed. I have considered the discussion in the Statement of Rebuttal Evidence of the reporting planner regarding waste management facilities forming part of the definition of heavy industrial activity. I remain of the view that waste management facilities should not be included in the definition. This is primarily because the effects are different in nature, being more akin to a distribution activity (as set out in the evidence of David Howie).

I have reflected on this and have given some further thought to the difference in effects between waste management facilities and other industrial activities that may produce odour. When assessing effects, I think it is helpful to look at scale, character, magnitude and nature. For most activities, odour is produced as a by-product of a process. In the case of a waste management facility, it is the raw product that has the potential to be odorous. This is a difference in the nature of the effect. Waste management facilities necessarily operate with acceptance criteria. Overly odorous loads are not accepted, nor is hazardous waste. Odour can be controlled by how the raw material is handled. The handling of that material, and as part of that the management of odour, is a key part of the activity itself. The nature of odour effects is therefore different to odour that might be part of a discharge to air from a manufacturing process.

To clarify, the intent in providing examples of other industrial activities that produce odour was to raise the point that an activity generating odour does not in itself mean it is a heavy industrial activity. I note that some waste management facilities, or parts of a resource recovery park, do not generate odour, and odour is able to be managed.

I was not aware of the older complaints referred to in the reporting planner's evidence from 2016 and 2019. Two complaints over a 10-year period that were resolved by the operator is one indication that the effects of the Seaview Transfer Station are able to be well managed.

In regard to health and safety effects, I had set out in my evidence that the lack of certainty on what health and safety effects were to be assessed could make resource consent processes less efficient. The reporting planner has recommended the concept of residual risk be extended to the Industrial Zones chapter. I agree this would provide certainty about the range of safety effects to be considered.

In my evidence I suggested that the terms offensive or objectionable were too general to be used in a definition. The reporting planner has invited me to define those terms or suggest wording to clarify them. I have spent some time thinking about this. Generally, expert assessment of FIDOL factors is required to determine whether an effect is objectionable or offensive. FIDOL considers Frequency, Intensity, Duration, Offensiveness and Location. It would seem to be difficult to accurately determine whether an activity has effects that are offensive or objectionable in the absence of expert assessment. This highlights the difficulty with including those terms in the definition. Applicants may potentially have to engage an expert to determine how their activity is defined.

Review of other District Plans

This may also highlight why few of the plans I reviewed have a definition of heavy industrial activity. Of the three plans I reviewed that had a definition of heavy industry, two included longer lists of specific activities that those plans considered heavy industry (the Invercargill District Plan and the Christchurch

City Plan). The third, the Wellington City Plan, has a definition that similarly refers to offensive and objectionable. To clarify, the plans I undertook a high-level review of were primarily for urban areas of differing sizes, and generally locations that have waste management facilities. I also tried to obtain a selection of more recent plans and some more established. Given the relatively tight timeframes, I excluded those plans that were less accessible. The intent of the review was to see what general approaches are taken by other District Plans.

Including a more specific list of activities may improve the efficiency of consenting when the definition is applied. I have appended the definitions of heavy industry in the three plans, and the schedule that the Invercargill Plan cross-refers to, as Attachment 1. As per my statement of evidence, it is my view that waste management facilities should not be included in the list and should be specifically defined and regulated. I do not have specific knowledge of the range of activities listed in the various definitions to provide advice on what should be included in a more specific list.

Mandatory notification rule

The reporting planner has also commented on the mandatory notification rule. After considering these comments, I agree with the planner's reasoning and accept that the specific wording proposed in the submission could not be adopted. I also agree that the intent of the submission could be addressed by making the activities to which it applies more specific.

The comments in my evidence attempted to highlight that, if not specific, mandatory notification rules could capture activities that were not intended to be captured. The submission intended to capture the principle that notification, in cases not warranted by the effects and where it is unlikely to result in additional information that benefits the decision, results in inefficiency arising from the additional time and cost of the process.

The submission was also written before clarity was provided through Hearing Stream 1 that ancillary activities would be considered part of a waste management facility. The concern when writing the submission was that a waste management facility that had both a second-hand goods store and a repair café could by default be captured by the rule. Clarification has been provided that indicates this is not the case. Beyond Waste Management's particular circumstances, however, I consider that mandatory notification rules need to be used carefully and specifically.

Attachment 1 – Heavy industrial activity definitions

The definitions below are reproduced from the relevant operative or proposed District Plans. They are set out as they appear in those plans.

Christchurch City Plan – heavy industrial activity

Heavy industrial activity means:

1. blood or offal treating; bone boiling or crushing; dag crushing; fellmongering; fish cleaning or curing; gut scraping and treating; and tallow melting;
2. flax pulping; flock manufacture or teasing of textile materials for any purpose; and wood pulping;
3. storage and disposal of sewage, septic tank sludge or refuse;
4. slaughtering of animals; storage, drying or preserving of bones, hides, hoofs or skins; tanning; and wool scouring;
5. the burning of waste oil in the open air or in any combustion processes involving fuel-burning equipment;
6. any other processes involving fuel-burning equipment, which individually or in combination with other equipment, have a fuel-burning rate of up to 1000 kg/hr;
7. the open burning of coated or covered metal cable or wire, including metal coated or covered with varnish, lacquers, plastic or rubber;
8. any activity with the potential to discharge asbestos to air, including the removal or disposal of friable asbestos, except where it complies with the Health and Safety in Employment (Asbestos) Regulations 1998 and is supervised and monitored by Occupational Safety and Health staff;
9. burning out of the residual content of metal containers used for the transport or storage of chemicals;
10. the burning of municipal, commercial or industrial wastes, whether by open fire or the use of incinerators for disposal of waste;
11. any industrial wood pulp process in which wood or other cellulose material is cooked with chemical solutions to dissolve lining, and the associated processes of bleaching and chemical and by-product recovery; and
12. crematoriums and embalming services.

Wellington City 2024 District Plan – heavy industrial activity

Means an Industrial Activity that generates: offensive and objectionable noise, dust or odour, significant volumes of heavy vehicle movements, or elevated risks to people's health and safety.

Heavy Industrial Activities include quarries, abattoirs, refineries, the storage, transfer, treatment, or disposal of waste materials or significant volumes of hazardous substances, other waste management processes or composting of organic materials.

Invercargill District Plan – heavy industry

Means any industry listed in APP16 – Appendix 16 Schedule of Heavy Industries. This includes any ancillary retail sales and/or warehousing.

APP16 – Appendix 16: Schedule of Heavy Industries

1. Acetylene-gas manufacture
2. Acids manufacture
3. Aerosol packers and manufacture
4. Aggregates processing
5. Aluminium alloy manufacture
6. Alkali-waste works
7. Ammonia manufacture
8. Ammunition manufacture
9. Animal by-products manufacture
10. Asbestos manufacture
11. Asphalt manufacture
12. Battery manufacture and recycling
13. Bearing manufacture
14. Bisulphide of carbon works
15. Boiler makers
16. Boiler manufacture
17. Boiling down works
18. Bone boiling and crushing
19. Briquette manufacture
20. Bulk storage of asphalt, tallow, industrial chemicals and scrap metal
21. Candle manufacture
22. Celluloid works
23. Cement – packing bag, cleaning works
24. Cement manufacture
25. Chemicals manufacture
26. Chlorine works
27. Coke manufacture
28. Concrete batching
29. Dag crushing
30. Dairy processing
31. Detergent manufacture
32. Distillation of coal, wood and bones
33. Electroplating and galvanising
34. Explosive manufacture and storage
35. Fat rendering
36. Fellmongering
37. Fertiliser manufacture, processing, and storage, with the exception of storage included as a permitted activity under Rule 3.7.1
38. Fibreglass manufacture
39. Fibrous plaster manufacture
40. Fireworks manufacture and storage
41. Fire clay products manufacture
42. Fish processing
43. Flax pulping
44. Flock manufacturing
45. Fluorine works
46. Foundry
47. Fur curing and tanning
48. Glass manufacture

49. Glue manufacture
50. Gunpowder manufacture
51. Gypsum manufacture
52. Hydrochloric acid manufacture
53. Incinerator works
54. Industrial chemicals manufacture
55. Iron works and foundry
56. Lacquer manufacture
57. Lead works
58. Leather tanning
59. Lime manufacture
60. Linoleum manufacture
61. Lucerne dehydration
62. Manure (artificial) manufacture
63. Meat Processing Facility
64. Motor vehicle wrecking and crushing
65. Natural gas, oil or petroleum distillation or refining
66. Oxygen – gas manufacture
67. Paint, varnish, lacquer etc. manufacture
68. Petroleum based products manufacture
69. Plastics manufacture
70. Pulp and paper manufacture
71. Pyridine works
72. Railway workshops
73. Rubber goods manufacture
74. Sandblasting
75. Sale stock yards (commercial)
76. Sewage and septic tank sludge storage and disposal
77. Smelting metals (all types)
78. Soap manufacture
79. Solid waste collection, recycling and disposal facilities
80. Steel works
81. Stone and mineral crushing
82. Sulphur-chloride manufacture
83. Sulphur-dioxide manufacture
84. Tallow-melting and refining
85. Tanning and curing of hides and skins
86. Tar manufacture, refining, mixing
87. Timber treatment
88. Turpentine manufacture
89. Varnish manufacture
90. White lead manufacture
91. Wood chipping, sawmilling and manufacture of timber products
92. Wool scouring
93. Zinc chloride manufacture
94. Zinc works

Separation distance guideline

Publication 1949

August 2024

Policy and Regulation Branch



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1. Introduction

This guideline provides advice on recommended separation distances between industrial land uses that emit odour and/or dust, and sensitive land uses.

Separating incompatible land uses is important. It protects the community from industries and activities that pose health, safety and amenity risks. It also protects industries from incompatible land use and development. Separation distances are often used as a planning tool to manage and mitigate these risks by keeping conflicting land uses apart.

Environment Protection Authority Victoria (EPA) developed the guideline to support state agencies, local government, community and industry to make informed land use decisions under the *Planning and Environment Act 1987* (P&E Act) and the *Environment Protection Act 2017* (EP Act).

This includes statutory and strategic planning decisions, as well as EPA decisions on licences, permits, registrations and applications for new or expanding developments in Victoria.

It is essential to address land use compatibility early in the land use planning process to avoid potential conflicts after approvals are in place.

This guideline is organised into 2 environmental categories:

1. Odour
2. Dust

Each of these categories includes:

- information about their potential risks and impacts
- recommended separation distances between industries and sensitive land uses
- an overview of the separation distance decision-making process
- references to the relevant assessment methodology and tools.

A recommended separation distance may be varied by using the decision-making process and considering environmental and site-specific factors detailed in this guideline.

Note: For information about recommended separation distances for landfills see the [Landfill buffer guideline](#) (EPA publication 1950).

1.1. Purpose of this guideline

The purpose of this guideline is to support land use and development decisions that:

- protect the community from human health and amenity risks associated with unintended offsite odour and dust generated by industry/activity
- protect industry/activities from inappropriate land use and development nearby that may constrain operations.

This guideline is intended for planning authorities, responsible authorities, industry, developers, the community and EPA. It provides guidance on what to consider when preparing and assessing planning scheme amendments, precinct structure plans, planning permits and EPA permissions applications.

The guideline supports decision-makers to direct land use and development to the most appropriate locations based on the level of risk. It also supports planning decision-makers to prevent underuse of land adjacent to industrial land by identifying compatible land uses within a separation distance.

This guideline contributes to the [state of knowledge](#) – the general body of knowledge about the harm or risks of harm to human health and the environment – including the controls for eliminating or reducing those risks. It is expected that the state of knowledge will improve over time as new knowledge and opportunities to better manage risk are established.

1.2. Why separation distances are necessary

Separation distances are intended to accommodate both routine or day-to-day emissions and unintended offsite emissions. Where there is routine or day to day emissions from a premises, there may still be unintended offsite

emissions experienced at or beyond the boundary of the source premises. Unlike routine emissions, unintended emissions are in addition to routine emissions and are often intermittent or episodic. They may occur due to:

- the nature of the operation
- minor changes in weather conditions
- minor accidents
- minor equipment failure.

Unintended offsite emissions may still happen even when an industry/activity is operating in accordance with all relevant statutory obligations, including minimising the risk of harm to human health or the environment from pollution and waste so far as reasonably practicable.

Separation distances are intended to allow unintended emissions to disperse, and in doing so, minimise human health and amenity risks for any nearby sensitive land uses.

However, the unintended offsite emissions that separation distances account for do not extend to those resulting from major abnormal weather conditions, major accidents, or major equipment failure from activities.

The term sensitive use varies depending on the context of the proposed use or development. In this guideline it is defined as any land use that requires a focus on protecting human health and wellbeing, local amenity and aesthetic enjoyment. Appendix D provides examples of sensitive land uses.

Separation distances are not to be used by duty holders as an alternative to controlling offsite impacts or meeting legal obligations.

The use of separation distances can:

- prevent land use conflict
- help protect the health and amenity of sensitive land uses
- minimise risks and mitigate odour and dust impacts from certain industries and activities
- help protect industrial and commercial land uses and activities
- provide local government, industry, developers and the community with some certainty about future land use.

1.3. Scope

This guideline applies to offsite odour and dust emissions from industrial uses and activities that have the potential to impact human health and wellbeing, local amenity and aesthetic enjoyment. Ambient (or criteria air pollutants) and hazardous air pollutants are not included in the scope of this guideline.

While some odorous or particulate substances are also hazardous air pollutants, this guideline only considers the odorous or nuisance dust impacts of substances. Hazardous air pollutants are considered in the [Guideline for assessing and minimising air pollution in Victoria](#) (EPA publication 1961).

The recommended separation distances in this guideline do not account for incidents such as major abnormal weather conditions, major accidents, or major equipment failure. Emissions resulting from these events can extend beyond a specified separation distance and should be managed by implementing reasonably practicable contingency measures.

Compliance with the EP Act, including the general environmental duty (GED) is an obligation on all applicants. Meeting a recommended separation distance or buffer is not a substitute for best practice.

This guideline is not to be used retrospectively to require an existing industry/activity operating in accordance with all relevant statutory obligations to meet a recommended separation distance. However, it may be used to determine an applicable separation distance to support land use and development decisions surrounding an existing industry/activity or to assess proposed changes to, or expansion of, an existing industry/activity where permission is required.

This guideline is not intended to be used to revisit decisions already made by planning decision-makers (for example, planning permits) and EPA (permissions).

This guideline should be applied early in planning processes as separation distances are most effective where they are used to direct the location and siting of land uses to avoid incompatibility or encroachment. This includes:

- strategic planning processes, including those considering Ministerial Direction 19, and the development of draft strategic plans, including precinct structure plans or planning scheme amendments that have yet to receive final planning authority approval.
- for strategic plans that have received approval, the guideline should be considered for any future assessments within or near the plan area.
- the assessment of permits for use, development or subdivision of land for proposed sensitive uses or for industrial uses in an industrial zone that encroaches into sensitive land uses.

The guideline should also be considered where potentially incompatible uses are permissible (no permit required) but the risks of harm to human health or the environment still need to be considered.

Decision-makers should consider the guidelines to inform strategic planning processes. It is intended that planning decision makers and EPA will consider this guideline for applications for a planning permit and/or an EPA permission to expand operations, where relevant. This includes where there is already encroachment between a sensitive use and industry/activity.

Decision-makers (planning authorities, responsible authorities and state agencies) and applicants should review all relevant regulations, policies and guidance to ensure that other human health and amenity issues have also been appropriately considered and all other requirements under other legislation are met. This includes clause 53.10 (Uses and activities with potential adverse impacts) of the Victoria Planning Provisions (VPP) and the supporting Planning Practice Note 92 *Managing buffers for land use compatibility* (PPN92).

This guideline should be read in conjunction with:

- [General environmental duty](#)
- [Implementing the general environmental duty: A guide for licence holders](#)
- [Environment Reference Standard](#)
- [Self-assessment tool for small business](#) (EPA publication 1812)
- [Industry guidance: supporting you to comply with the general environmental duty](#) (EPA publication 1741)
- [Assessing and controlling risk: A guide for business](#) (EPA publication 1695)
- [State of knowledge and industry guidance](#)
- [Reasonably practicable](#) (EPA publication 1856)
- [Fact sheet: Engaging consultants](#) (EPA publication 1702)
- [Odour advice for businesses](#)
- [Dust advice for businesses](#)
- [Landfill buffer guideline](#) (EPA publication 1950)
- [Clause 53.10 of the VPP](#)
- [Buffers and land use compatibility](#), Department of Transport and Planning.

The recommended separation distances listed in this guideline were derived from:

- a review of Recommended separation distances for industrial residual air emissions (2013) (EPA publication 1518) while considering EPA's experiences and research, including a review of separation distances recommended by similar jurisdictions in Australia
- a review of clause 53.10 of the VPP undertaken by the Department of Environment, Land, Water and Planning
- empirical assessments of industrial sites and activities by EPA scientists and officers
- EPA industry-specific guidance for wastewater treatment plants and composting industries
- The review of codes of practice for intensive animal industries in consultation with Agriculture Victoria.
- other guidelines and codes if relevant to the industry/activity.

2. Legislative framework

The P&E Act and the VPP provide the basis for the regulation of land use planning and development. Separation distances are a preventative tool to manage land use conflicts. The EP Act’s intent is embedded in the VPP through consideration of the risks and impacts of land use and development on human health and the environment.

The EP Act provides a statutory framework for industry and a preventative approach to protecting human health and the environment from the impacts of pollution or waste. Information about the EP Act including the [GED, state of knowledge](#) and what [reasonably practicable](#) means can be found on the [EPA website](#).

Appendix A includes more detail about the relevant planning policy references for separation distances for odour and dust.

2.1. The difference between separation distances, buffers and threshold distances

This guideline provides recommended separation distances specifically for odour emissions and dust emissions for different industry/activity categories. Some of these industries may also be listed in clause 53.10 of the VPP.

There is often confusion about how the terms separation distance, threshold distance and buffer are used. While they are similar in concept, they have specific meanings and are different for key reasons as set out in Table 1.

Table 1: Definitions of separation distance, threshold distance and buffer

Description	Policy reference
<p>Separation distance</p> <ul style="list-style-type: none"> Distance between incompatible land uses where there is potential for adverse human health or amenity impacts. Typically occurs between an industrial (or sometimes commercial) land use and a sensitive land use. Used as a tool to determine whether the siting of a proposed land use or development is suitable in the context of surrounding land uses. Should be measured according to Section 4 in this guideline. 	<p>This guideline sets out recommended separation distances for odour and dust for industries/activities listed in Table 2 and Table 4.</p>
<p>Threshold distance</p> <ul style="list-style-type: none"> A trigger for further detailed assessment of potential adverse offsite impacts via a planning permit. Based on a broader range of risks than those covered in this guideline (odour and dust). For example, noise and hazardous air pollutants. 	<p>Clause 53.10 of the VPP sets out the threshold distances for different types of uses and activities with potential adverse impacts.</p> <p>Referral to EPA is triggered under Section 55 of the P&E Act if a threshold distance is not met or an industry/activity is listed with no threshold distance specified.</p>
<p>Buffer</p> <ul style="list-style-type: none"> Land used to separate or manage incompatible land uses – often industrial uses and sensitive uses – to ensure land use compatibility and avoid land use conflict. May contain multiple separation distances that respond to various risks to human health and amenity – for example, where a buffer is made up of separation distances that respond to odour, dust and landfill gas migration, the buffer will extend to the largest of these separation distances. 	<p>PPN92 provides guidance on the planning provisions in the VPP relating to buffer management, including the Buffer Area Overlay.</p>

- Does not need to stop the use and development of land – instead, it ensures land use and development responds to the risks posed and allows for a transitional area of land between 2 distinct land uses to lessen the risk of harm posed by one land use type on another.

2.2. EPA's role in land use planning

Land use planning has an important role in achieving the purpose of the EP Act – the protection of human health and the environment from pollution or waste. However, land use and development within separation distances is not controlled by EPA. Planning and responsible authorities determine permitted land use and development by implementing the planning scheme, including within separation distances. Separation distances are implemented through appropriate planning policies and controls (including zones and overlays), and by making decisions on individual planning permit applications.

EPA's involvement in land use planning occurs through both statutory and strategic planning mechanisms:

- EPA is a statutory referral authority for some land use planning proposals under the P&E Act. EPA may be a determining or recommending authority as set out in clause 66 of the VPP. Where EPA is a determining referral authority and objects to a proposal, the responsible authority must refuse to grant the permit. In instances where EPA specifies conditions, these must be included on any permit granted.
- EPA can be given notice of an application when the responsible authority wants to seek advice from EPA, but mandatory referral is not required. EPA takes a risk-based approach to these types of referrals.
- Ministerial Direction 19 requires planning authorities to seek early advice from EPA when undertaking strategic planning processes and preparing planning scheme amendments that may significantly impact Victoria's environment, amenity or human health due to pollution and waste.
- EPA also has a role in proposals to apply the Buffer Area Overlay. PPN92 sets out the steps to be taken when considering its application.

This guideline informs EPA's response to statutory and strategic planning matters where separation distances are relevant. EPA uses its environmental expertise to assist planning and responsible authorities with understanding the environmental risks associated with certain planning and development decisions.

The guideline does not change the roles and responsibilities of the planning or responsible authority or EPA.

EPA can assist with land use and development decisions by providing information on the best available techniques and technologies and provide guidance where there is a proposed variation in separation or buffer distances. EPA can also provide guidance for environmental protection and apply regulatory interventions where appropriate.

EPA also has a role in assessing applications for new and amended permissions for industries/activities under the EP Act. Depending on the risk and type of activity this may be a licence, permit or registration. There are some instances where a proposal may require both a planning permit and EPA permission. While EPA's assessment for both will consider the impact and risk of harm from pollution and waste, the planning assessment focuses on the land use being proposed, and whether it is sited appropriately and compatible with surrounding uses. The permission assessment focuses on the design and operation of the activity. The triggers for assessment are also under different Acts – the EP Act and the P&E Act.

3. When to consider separation distances

3.1. Agent of change principle

The agent of change principle requires the person or entity proposing a land use or development (new or expanding, modified or varied) that may result in conflicting land uses to provide evidence to the decision maker that variation from a specified separation distance is appropriate. The agent of change has the responsibility to:

- consider their obligations under the GED, including minimising the risks of harm to human health or the environment from pollution or waste from the proposed activity
- avoid land use conflict
- ensure potential impacts on nearby land uses are appropriately mitigated and managed.

The agent of change principle applies to both individual applications and strategic planning matters. Depending on the proposal, the agent of change could be either the industry/activity or the sensitive use/development.

The following are examples of proposed sensitive land use or development as the agent of change:

- planning permit applications for a sensitive land use or development
- strategic planning matters involving a new residential, education, mixed-use or other zone or precinct permitting sensitive land uses
- development of a local land use policy/strategy.

The following are examples of proposed industrial use or development as the agent of change:

- planning permit applications for industrial land use or development (including any listed in clause 53.10 of the VPP)
- strategic planning matters involving an existing or proposed employment or industrial precinct/use
- development of a local land use policy/strategy relating to industry/activities
- applications for permissions under the EP Act, including development licences, operating licences, permit activities and registrations.

Agent of change example scenarios:

A landowner owns an abandoned light manufacturing site located near a train station. Thinking the site would be perfect for apartments and small retail, the landowner proposes to rezone and develop the land for sensitive uses. However, the manufacturing site is near other factories and odour-emitting industries. It is the responsibility of the landowner to demonstrate that the proposed land use will not be at risk of harm from the nearby incompatible land uses.

OR

A paint manufacturing company intends to expand its operations and add a new odour-emitting facility on its land to increase the levels of paint production. For this to happen, the site will be introducing a new source of odour that will require a separation distance. The proposed facility is located near the boundary of its land and is close to well established homes. It is the responsibility of the company to demonstrate that the proposed development will not pose a risk of harm to the nearby sensitive land uses.

In these scenarios:

- the land use or development proposal triggers the need to consider separation distances
- the proponent of the development proposal is the agent of change.

3.2. How to measure separation distances

3.2.1. Odour and dust

Separation distances for odour and dust are determined by measuring from the activity boundary of the industrial land use to the nearest sensitive land use. The activity boundary is the area that includes all current or proposed industrial activities (including plants, buildings or other sources) that may produce odour or dust emissions (including stockpiles, windrows, leachate ponds, unsealed surfaces and pollution control equipment).

If a business changes its use or moves an activity within the property boundary, the requirement for a planning permit or development licence may trigger a reassessment of adequate separation distances.

Some industries or activities may have their own guidance for measuring separation distances. Where these exist, the approach outlined in them should be adopted. However, if the guidance is inconsistent with the EPA methodology, [Guidance for assessing odour](#) (EPA publication 1883) should be used.

Two methods to measure separation distances for odour and dust are provided below to allow consideration of sensitive land uses in different geographical contexts – ‘urban’ and ‘rural’. These methods differ in the measurement point for the nearest sensitive land use.

3.2.2. Method 1: the urban method

Method 1 measures the separation distance from the activity boundary of the industry/activity to the property boundary of the nearest sensitive land use, as illustrated in Figure 1.

Method 1 should be applied where the nearest sensitive land use is either:

- in an urban area or township, or
- on a site less than 4,000 m²; or in a zone allowing subdivision to less than 4,000 m².

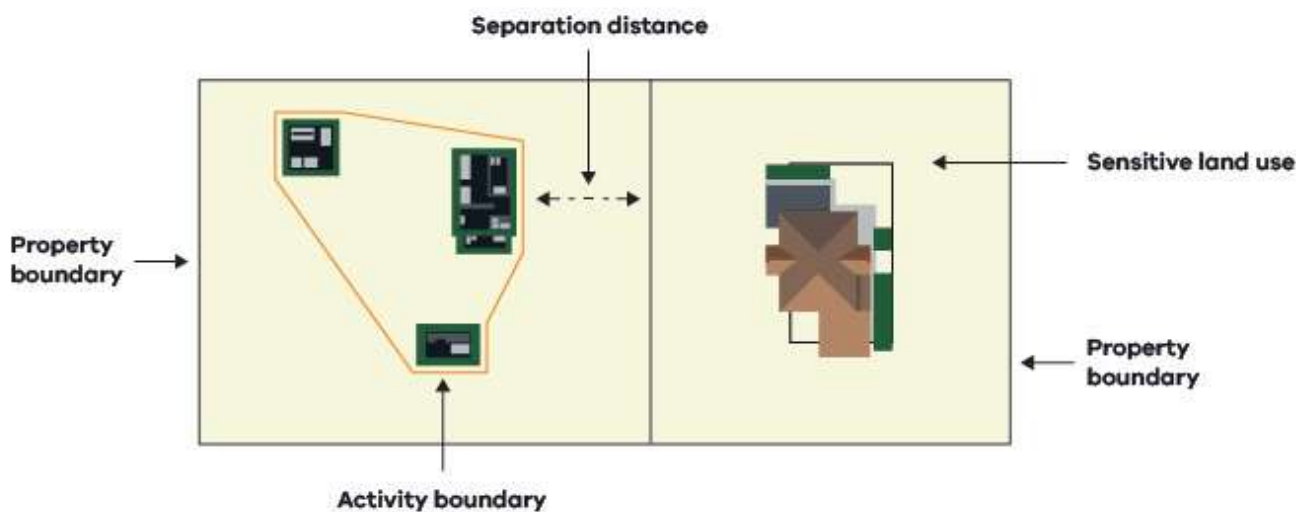


Figure 1. Measuring separation distances using Method 1: the urban method

3.2.3. Method 2: the rural method

Method 2 measures the separation distance from the activity boundary of the industry/activity to the activity boundary of the sensitive land use, as illustrated in Figure 2. The activity boundary of the sensitive land use is the area (within a convex polygon) that includes all current or proposed sensitive uses (including residences, garages and carports, barbecue areas, clotheslines and swimming pools).

Method 2 should be applied where the nearest sensitive land use is both:

- not in an urban area or township, and
- on a site at least 4,000 m², or in a zone requiring subdivision to at least 4,000 m².

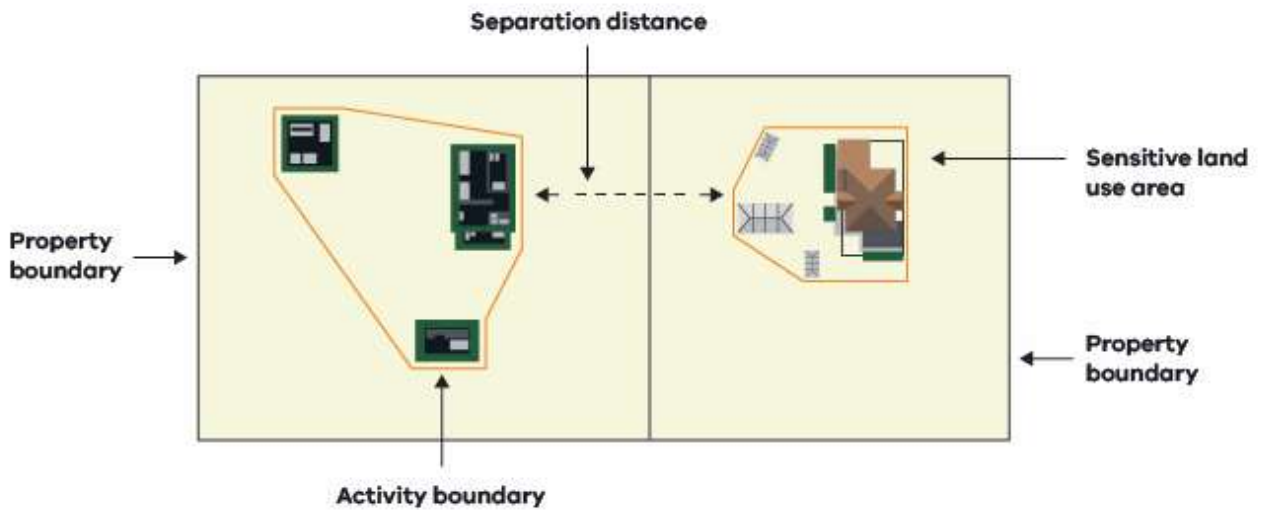


Figure 2. Measuring separation distances using Method 2: the rural method

4. Decision-making process for separation distances – odour and dust

The decision-making process for considering a separation distance between an odour or dust emitter and sensitive land use is categorised into 3 stages:

- Stage 1 – Does a recommended separation distance apply?
- Stage 2 – Is the recommended separation distance met?
- Stage 3 – Is the recommended separation distance acceptable?

Each of these stages contains a series of steps and questions that will help the user identify the information and actions required to understand the risks and impacts of their proposed activity. As every development proposal will be different, the opportunity to seek a variation to a recommended separation distance should only be determined by following this decision-making process.

The flowcharts in Figure 3 and Figure 4 provide an overview of stages 1 and 2 of the decision-making process to apply depending on the development scenario. In Figure 3 the proponent of an industrial use/development is the agent of change, whereas in Figure 4 the agent of change is the proponent of a sensitive land use/development.

Sections 4.2– 4.4 provide further detail for each of the steps outlined in the stages.

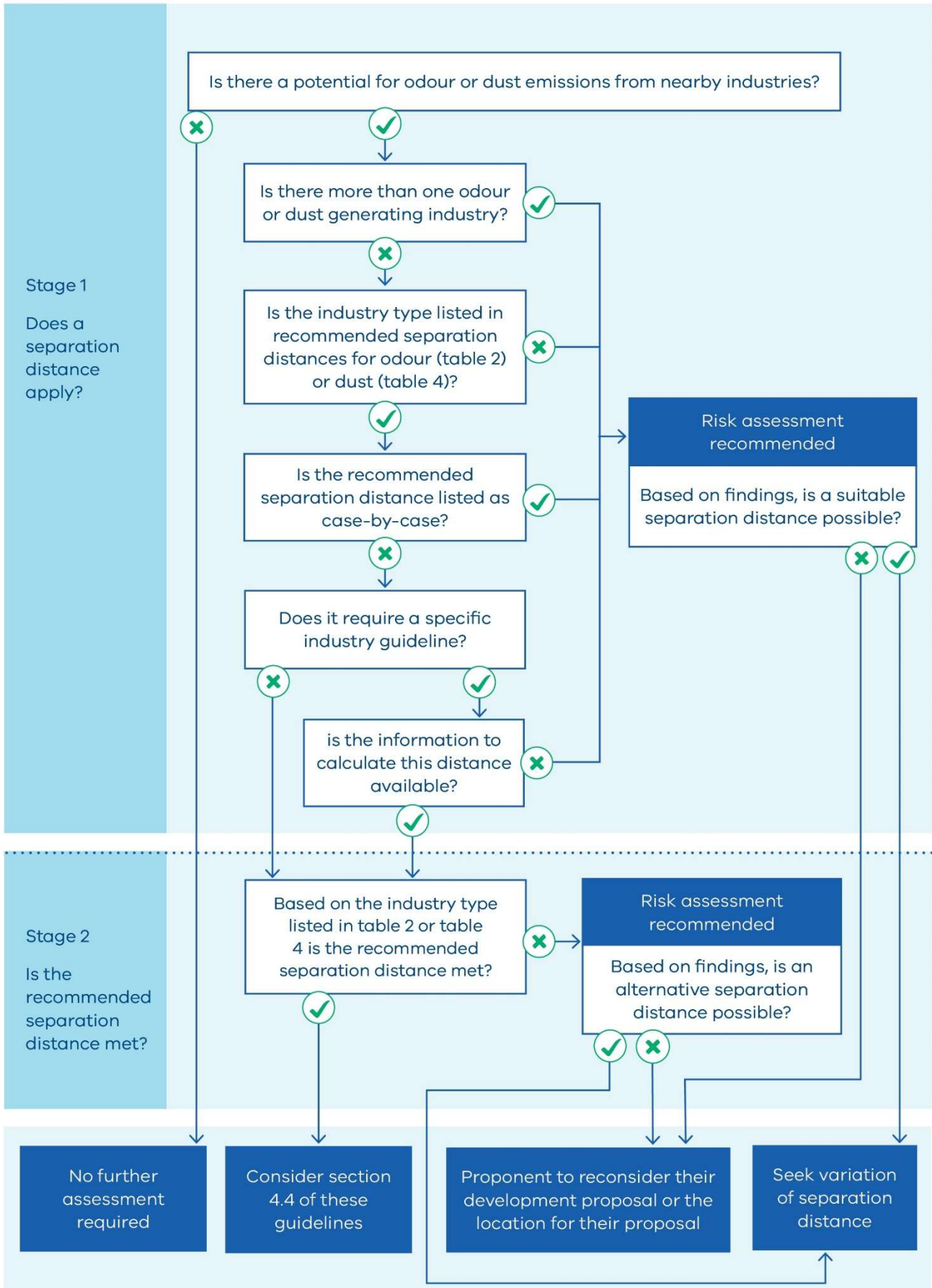


Figure 4. Separation distance decision-making process for odour or dust – proposed sensitive use/development

4.1. What is a risk assessment?

A risk assessment identifies and evaluates the impacts and risks associated with an activity that may cause harm to human health or the environment. As shown in the decision-making process, a proponent may be recommended to submit a risk assessment with their development proposal to the decision-maker. This could be a planning authority, responsible authority or state agency.

The purpose of a risk assessment is to show a clear understanding of the potential impacts of the activity (whether it be odour or dust) on sensitive land uses. The findings of a risk assessment will assist in determining if a variation to a recommended separation distance is possible and appropriate.

EPA recommends that the risk assessment be completed to the satisfaction of the decision maker and should follow the guidelines set out in EPA publications relevant to the activity source:

- for an odour risk assessment, refer to [Guidance for assessing odour](#) (EPA publication 1883)
- for a dust risk assessment, refer to [Guidance for assessing nuisance dust](#) (EPA publication 1943).

EPA recommends that the risk assessment be done by a suitably qualified environmental consultant using this guideline and any other relevant EPA publications. Visit EPA's website for [guidance on engaging an environmental consultant](#).

EPA also recommends using various assessment tools noted in relevant EPA publications when preparing a risk assessment to identify key elements that may affect the risks of odour or dust emissions from the source. Each tool has its strengths and limitations. A combination of these tools can assist in providing an effective risk assessment.

A decision-maker may seek an independent environmental consultant to review the risk assessment and advise on the land use or development proposal. The decision maker may contact EPA for further guidance and input if evaluating the proposal is complex and challenging, based on the risk assessment.

In certain circumstances, the findings of a risk assessment may result in recommending a greater separation distance than the distance listed in this document due to the characteristics of the source or the environment.

4.2. Stage 1 – Does a separation distance for odour or dust apply?

This section describes the steps shown in Figure 5 and Figure 6 to determine whether a separation distance applies to the land use or development that is being proposed.

4.2.1. Identify possible odour or dust emissions and impacts

The first step is to identify whether the proposal may emit, generate or be impacted by odour or dust:

- for an industrial land use or development – will the proposal have odour or dust emissions?
- for a sensitive land use or development – will the proposal be in the vicinity of nearby industries with existing or potential odour or dust emissions?

A definition of industrial land use and sensitive land use in the context of odour and dust emissions can be found in Appendix D.

4.2.2. Identify whether the industry/activity has a recommended separation distance

The next step is to identify whether the industry/activity type is listed in Table 2 (for odour) or Table 4 (for dust) in this guideline.

In some circumstances, an industry/activity may not have a recommended separation because:

- the recommended separation distance listed in Table 2 or Table 4 is noted as case by case, or
- the industry/activity is not listed in Table 2 or Table 4 but has the potential to generate odour or dust.

In these circumstances, the proponent should undertake a risk assessment to understand the potential odour or dust impacts of the proposal. Depending on the findings of the risk assessment, the proponent may seek to determine a suitable separation distance.

The depth of analysis and process required to determine a suitable separation distance is the same as that for varying a recommended separation distance. Refer to Sections 5.2 (for odour) and 6.2 (for dust) for further details about varying a recommended separation distance.

4.2.3. Identify whether the industry/activity is meeting its obligations in accordance with the EP Act

The recommended separation distances listed in this guideline assume that the industry/activity is meeting the obligations of the GED (relevant to odour or dust emissions). The GED requires a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste to minimise those risks so far as reasonably practicable.

Odour and dust can be produced at multiple points in the business process. Understanding individual risks and available prevention measures is the only way to prevent odour or dust pollution. See further guidance in [Assessing and controlling risk: A guide for business](#) (EPA publication 1695.1).

Risk prevention measures will depend on the business type, and therefore the source that needs to be managed. Where engineering solutions are not reasonably practicable – for example, large area sources – effective site planning and management practices should be implemented.

For a proposed industry/activity encroaching on existing sensitive uses, EPA recommends that the proponent identifies whether the best available techniques and technology are being used to manage emissions, citing relevant industry regulations, standards, permissions or guidance. Refer to [Demonstrating best practice](#) (EPA publication 1517). If this information is not provided or is not known a risk assessment should be undertaken.

For proposed sensitive land uses encroaching on existing industry/activity, EPA recommends that the agent of change provides evidence to demonstrate that risks of harm to human health or the environment from pollution or waste have been minimised so far as reasonably practicable as part of the application.

There are no statutory obligations on an industry/activity to supply information about its operation to third parties about separation distances. However, industries are encouraged to support separation distance assessments, either by supplying data to third parties or doing their own assessment of their operations.

4.3. Stage 2 – Is the recommended separation distance for odour or dust met?

The next step is to determine whether the proposal meets the recommended separation distance.

To determine whether the proposal meets the recommended separation distance, compare the recommended separation distance for the type of industrial land use with the measured distance to the nearest sensitive land use:

- if the measured distance to the nearest sensitive land use is greater than the recommended separation distance listed in these guidelines the separation distance is met.
- if the measured distance to the nearest sensitive land use is less than the recommended separation distance listed in this guideline the separation distance is not met. In this case, a risk assessment is recommended, and possibly an application to seek a variation of the separation distance.

In some instances, although a separation distance may be met, it may not be acceptable due to other factors listed in Section 4.4.

4.4. Stage 3 – Is the recommended separation distance for odour or dust acceptable?

Even though a proposal may meet a recommended separation distance, in some circumstances there could be site-specific factors that may result in the recommended distance being unacceptable.

Factors that can impact the acceptability of a recommended separation distance for odour include:

- cumulative impacts
- interface land uses
- the scale and configuration of the operation
- the environment surrounding the odour emitter.

Factors that can impact the acceptability of a recommended separation distance for dust include:

- size of the source
- type of dust emission
- meteorology
- terrain and interface land use
- the sensitivity of the receptor (existing and/or proposed)
- historical context

- cumulative impacts.

If these factors influence the acceptability of a recommended separation distance, EPA recommends a risk assessment be prepared to demonstrate that either the recommended separation distance is acceptable or the recommended separation distance can be varied.

Further detail on environmental and site-specific factors is provided in Section 5.3 (for odour) and 6.2 (for dust).

Consideration of these factors is generally a prerequisite for site-specific variation, but not a guarantee that a variation is justified.

5. Odour

Odour from industry is one of the largest sources of complaints received by EPA. Odour can affect people differently depending on their level of sensitivity. Some people are naturally tolerant of odour. In contrast, others react significantly to the slightest concentrations of odour. Despite the range in reactions to odour, pollution from odour can cause harm to the environment and communities. The potential impacts of odour can negatively affect people's quality of life, human health, and public amenity.

Unpleasant odours come from many industrial processes including food processing, animal husbandry, composting, and sewage treatment. People often complain about odours emitted from these sources, describing them as offensive.

People who are affected by odour often need to adjust their day-to-day activities. For instance, they may need to reduce time spent outdoors, refrain from opening windows or schedule activities to certain times of the day to avoid odour.

Repeated exposure to nuisance levels of odour can negatively affect people's quality of life as it may cause frustration, stress, discomfort or annoyance. It can also lead to health problems such as headaches, nausea and vomiting.

5.1. Separation distances for odour

Table 2 lists the industries with recommended separation distances for odour. It contains a definition of each industry/activity and, in some cases, information on the throughput or specifications of the industry/activity.

Where the table specifies 'case by case', the separation distance should be determined based on a risk assessment, following the assessment guidance that is provided in Guidance for assessing odour (EPA publication 1883).

If the industry/activity is a likely odour generator and not listed in Table 2, a risk assessment should be undertaken by the proponent unless written advice is provided by EPA.

Table 2: Recommended separation distances for odour

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Agriculture				
Cattle feedlot	Intensive animal production where cattle are kept or bred for the production of meat, incorporating all associated ancillary activities	Cattle feedlot	See further guidelines	<i>National Guidelines for Beef Cattle Feedlots in Australia</i> – 3rd Edition (2012) or as amended
Fish farming	Fish farming (land-based aquaculture)	Pond culture	100	
		Recirculating aquaculture systems (RAS – tanks in sheds)	150	
		Pump-ashore (coastal flow through)	200	
Animal feed manufacturing	Manufacturing feed and fodder from protein meals, grains, cereals, tallow and other ingredients	> 20,000 t/year*, without meat or meat by-products incorporated in feed	250	
		> 20,000 t/year, with meat or meat by-products incorporated in feed	500	
Intensive animal production (including meat and dairy)	Land used for animal production where the animals' food is imported from outside the immediate building, enclosure, paddock or pen. Includes all other species and uses not listed in this table		See further guidelines	As per current Agriculture Victoria advice and guidance.
Intensive dairy (cattle)	Land used for intensive animal production where cattle are kept or bred for the production of milk.		See further guidelines	As per current Agriculture Victoria advice and guidance.
Intensive sheep feedlot	Intensive animal production where sheep are contained and kept for the production of meat	Intensive sheep	See further guidelines	<i>National procedures and guidelines for intensive sheep and lamb feeding systems</i> (2020) or as amended

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Mushroom farm	Using blended solids or compost to produce mushrooms		Case by case	
Pig farm	Land used to keep or breed pigs	Indoor	See further guidelines	<i>National Environmental Guidelines for Indoor Piggeries</i> (2018) or as amended.
		Rotational outdoor	See further guidelines	<i>National Environmental Guidelines for Rotational Outdoor Piggeries – Revised</i> (Tucker and O’Keefe, 2013) or as amended.
		Low-density mobile outdoor	See further guidelines	<i>Victorian low-density mobile outdoor pig farm planning permit guidelines</i> (Department of Economic Development, Jobs, Transport and Resources, June 2018), or as amended
Poultry farm	Land used to keep or breed poultry	Chicken meat (including free range)	See further guidelines	<i>Planning and environment guideline for establishing meat chicken farms (Guide 1 – Assessment guide)</i> (2021)
		Chicken eggs (including free range)	See further guidelines	<i>Egg Industry Environmental Guidelines – Edition II</i> (2018)
		Low-density mobile outdoor – chicken meat or eggs.	See further guidelines	<i>Victorian low-density mobile outdoor poultry farm planning permit guidelines</i> (Department of Economic Development, Jobs, Transport and Resources, June 2018), or as amended
		Other poultry (including quails, ducks, turkeys, geese) meat and eggs (including outdoor and free range)	See further guidelines	As per current Agriculture Victoria advice and guidance
		Hatcheries	See further guidelines	As per current Agriculture Victoria advice and guidance

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Soil blending, conditioning and mixing (secondary processing industries)	Secondary processing industries' receipt, stockpiling and mixing of feedstocks for further sale/use		500	
Stock sale yard	Land used to hold, sell, and buy farm animals. (in standard animal units ¹) held at any one time.	> 500 standard animal units (SAU) per week	500	
		> 10,000 standard animal units (SAU) per week	1,000	
		> 30,000 standard animal units (SAU) per week	2,000	
Basic metal products				
Metal casting	Metal products formation by casting of molten metal	Die casting (no sand)	100	
		Sand casting, < 500 kg/cycle	500	
		Sand casting, > 500 kg/cycle	1,000	
Chemical, petroleum and coal products				
Biocide production	Production of biocides	> 2,000 t/year	1,000	
Chemical blending or mixing	Premises on which chemicals or chemical products are mixed, blended or packaged in a manner that causes or is likely to cause a discharge of waste into the environment	50 to 500 t/year	300	
		> 500 t/year	500	
		Chemical blending or mixing not causing discharge	> 5,000 t/year	300
Coke production and processing	Premises on which coke is produced, quenched, cut, crushed or graded from coal or petroleum	> 100 t/year	Case by case	

¹ Standard Animal Unit should be calculated as per current advice and guidance by Agriculture Victoria. The definition of animal unit in the *Environment Protection Regulations 2021* does not apply to this guideline.

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Cosmetic and toiletries production	Production of cosmetics or toiletries	> 2,000 t/year	300	
Fertiliser production	Production of inorganic fertilisers	> 2,000 t/year	1,000	
Hydrocarbon and coal products and derivatives production	Production of hydrocarbon products from petrol or coal, (solvents, briquettes, oil blends etc.)	> 2,000 t/year	500	
Industrial gas production	Production of industrial gases	> 2,000 t/year	Case by case	
Other organic and inorganic chemical production	Production of chemicals	> 2,000 t/year	Case by case	
Paint and ink production	Production of paint or ink	> 2,000 t/year	500	
Petroleum refinery	Refining oil or gas, producing hydrocarbon fractions or liquefying gas		2,000	
Pharmaceutical and veterinary product production	Production of pharmaceutical or veterinary products	> 2,000 t/year	500	
Plastics manufacture and or recycling	Conversion of raw plastic materials into finished products	> 2,000 t/year	200	
Rubber, polyester and synthetic resins production	Production of rubber, polyester or synthetic resins or polymers	> 2,000 t/year	500	
Rubber products production, using either organic solvents or carbon black	Production of rubber products using organic solvents or carbon black	> 2,000 t/year	250	
Soap and detergent production	Production of soap or detergent	> 2,000 t/year	500	
Food, beverages and manufacturing				
Abattoir – no rendering	Land used to slaughter animals with outdoor or exposed animal holding	< 500 standard animal units (SAU)/day	See note below	

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Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
	and loading areas (in standard animal units ² received)	> 500 standard animal units (SAU)/day	500	
		> 10,000 standard animal units (SAU)/day	1,000	
	Poultry processing works with no outdoor or exposed animal holding and loading areas (see note 2 below)	< 200 t/year	See note below	
		> 200 t/year	500	
Alcoholic beverage manufacturing	Production of beer, wine, etc.	< 2,000 litres/day	See note below	
		> 2,000 litres/day and < 5,000 litres/day	250	
		> 5,000 litres/day	500	
Bakery	Production of baked products	< 200 t/year	See note below	
		> 200 t/year	100	
		> 200 t/year, where heat is used to clean baking equipment	Case by case	
Coffee roasting	Roasting of coffee beans	< 200 t/year	See note below	
		> 200 t/year	250	
Malt works	Production of malt	< 200 t/year	See note below	
		> 200 t/year	250	
Milk products	Production of milk or dairy products	< 200 t/year	See note below	
		> 200 t/year	100	
Pet food	Production of pet food	< 200 t/year	See note below	
		> 200 t/year	500	
Produce processing works	Deep fat frying, roasting or drying	< 200 t/year	See note below	
		> 200 t/year	500	

² Standard Animal Unit should be calculated as per current advice and guidance by Agriculture Victoria. The definition of animal unit in the *Environment Protection Regulations 2021* does not apply to this guideline.

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Rendering and casings works	Knackeries or poultry processing works involving rendering. Facility may have an abattoir and/or wastewater plant (see note 2 below)	Non-service/ edible rendering/casings works.	500	
		Service rendering	1,000	
Seafood	Processing of seafood	< 200 t/year	See note below	
		> 200 t/year	500	
Smallgoods	Preserving or drying smallgoods	< 200 t/year	See note below	
		> 200 t/year	500	
Vegetable oil and fat production using solvents	Producing edible oils or fats using seed crushing, solvent extraction or fat deodorising	< 200 t/year	See note below	
		> 200 t/year	500	

Note 1: No separation distances are specified for:

- abattoirs processing less than 500 standard animal units (SAU) per day
- alcoholic beverage manufacturing producing less than 2,000 litres of product per day
- other food and beverage manufacturers producing less than 200 tonnes of product per year.

For these cases, EPA recommends there is no visible discharge of dust or emissions of odours offensive to the senses of human beings, beyond the boundary of the premises.

Note 2: Separate separation distances apply to the abattoir and wastewater treatment plants that must also be considered as per this guidance.

Mining and extractive industry

Gas and oil extraction	Natural gas or oil production wells including tight, shale and coal seams		Case by case	
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Miscellaneous manufacturing

Hot dip galvanising	Galvanisation – the process of applying zinc to metal resulting in a protective zinc coating to prevent rusting		400	
Manufacture of products using fibreglass and resin	Manufacturing products using fibreglass or resin	> 250 t/year	500	
Manufacture of tanned leather and artificial leather products	Processing leather by tanning or dressing	> 250 t/year	250	

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Printing	Printing works emitting volatile organic compounds (i.e., flexographic printing)	Emitting > 100 kg/day VOCs	500	
Storage of wet-salted and unprocessed hides	Storing packaged wet-salted or unprocessed hides		100	
Surface coating (including drum coating)	Commercial electroplating, electrolysis plating, anodising (chroming, phosphating and colouring), chemical etching or milling, application of paints or coatings to surfaces using solvents, or printed circuit board manufacture		200	
Non-metallic mineral products				
Asphalt plant	Production of asphalt	> 100 t/week	1,000	
Brick, tile, pipe, ceramics and refractory manufacturing	Production of bricks, tiles, pipes, pottery goods or refractories, processed in dryers or kilns	> 10,000 t/year	250	
Cement manufacturing	Production of cement from clays or limestone in either a furnace or a kiln to produce cement clinker	< 5,000 t/year	250	
		5,000 to 150,000 t/year	500	
		> 150,000 t/year	1,000	
Paper and paper products				
Paper and paper pulp manufacture	Processing wood, wood products, wastepaper or other cellulose materials to form pulp, paper or cardboard	Using semi-processed or recycled materials	500	
		Using sulphur-containing materials (i.e., Kraft process)	5,000	
		By other methods	Case by case	
Storage and transport				
Bulk storage of chemicals	Bulk storage of volatile odorous chemicals	> 1,000 t in total	1,000	

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Storage of petroleum and hydrocarbon products	Storage of petroleum products or crude oil in tanks	> 2,000 t in total, floating roof	100	
		> 2,000 t in total, fixed roof	Case by case	
Textiles				
Dyeing or finishing of cotton, linen and woollen yarns and textiles	Laminating, printing, dyeing etc.		100	
Production of artificial fibres and textiles	Textile manufacturing and processing including synthetic fibres or textiles		500	
Treatment and production of textiles – using chemicals or heat	Textile manufacturing and processing with textile finishing work using chemical or heat treatment		250	
Wool scouring	Textile manufacturing and processing including wool scouring		200	
Waste management				
Advanced resource recovery technology facility	Waste treatment facility for the immobilisation, thermal degradation, chemical conversion, biological oxidisation (aerobic or anaerobic), incineration, gasification or other treatment of solid waste		Case by case	
Biosolids application areas (Note for C1 Contaminant grade biosolids)	Application of biosolids (post-processing) at farms, or for soil reconditioning etc.	T1 biosolids	N/A	EPA Publication 943: Biosolids Land Application, or equivalent publication as updated
		T2 biosolids	500	
		T3 biosolids	1,000	
		T4 biosolids	Case by case	
		Note: *T1 biosolids are dry, fully processed and typically have the same odour profile as soil. The level of processing falls off from T2 down to T3 where you have increased liquid content and a lower level of processing.		
Chemical or oil recycling	Recycling and purification of waste oils (mineral oils,	> 1,000 m ³ ± total capacity	500	

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
	grease trap waste, tallow etc.)			
Composting facility	Receiving, storing temporarily and transferring putrescible solid and green waste. (does not include agricultural / on-farm composting)		See further guidelines	See <i>Designing, constructing and operating composting facilities</i> (EPA publication 1588) and Appendix C for new and emerging composting technologies and feedstocks. Assessing an application for a composting facility (EPA publication 3002)
Container, tanker or drum washing /reconditioning	Involves the washing and cleaning out of used drums, IBCS, tankers etc., involving the removal of chemical residues		500	
Incineration	Disposal of human and animal remains by cremation (does not apply to ancillary farm uses)	Cremation	150	
Landfill			See further guidelines	See <i>Landfill buffer guideline</i> (EPA publication 1950)
Liquid waste facility	Recycling, processing and transfer of liquid waste including sludges (does not include sewerage network assets)	> 1,000 m ³ ± total capacity	500	
Materials recovery and recycling facility	Collecting, dismantling, treating, processing, storing, recycling, or selling used or surplus materials	Accepting scrap metal	500	
Permanent contaminated soil treatment facility	Temporary storage, processing and treatment of contaminated soil. Excludes onsite (temporary or mobile) contaminated site soil treatment		500	
Priority industrial waste treatment facility	Storage, treatment, reprocessing, containment or disposal facilities handling any priority industrial waste not generated at the premises		500	

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Transfer station; municipal kerbside organics and/or putrescible waste (e.g., FOGO, municipal waste)	Collecting, consolidating, temporarily storing, sorting or recovering refuse or used materials before transfer for disposal or use elsewhere	Accepting green waste/putrescible waste (e.g., FOGO)	500	
Waste to energy plant	Facilities where waste streams are converted to energy by pyrolysis, combustion, fluidised bed systems etc.			Case by case
Wastewater treatment plant	Premises on or from which sewage (including sullage) effluent, is treated, discharged or deposited	Exceeding a design or actual flow rate of 5,000 litres per day		Case by case – see Appendix B of this guideline
Wood, wood products and furniture				
Manufacture of wood-fibre or wood-chip board	Manufacture of particleboard, plywood, MDF or chipboard			1,000
Sawmill	Sawing, milling, chipping, debarking and hogging			500
	Handling, cutting and processing logs into timber, including timber drying/seasoning			200
Timber preserving works	Treating or preserving timber using odorous chemical substances (creosote etc.)	> 10,000 m ³ of timber per year		250

Note: *t = tonnes.

5.2. Variation of recommended separation distances for odour

If a proponent wishes to seek a variation of a recommended separation distance for odour from a decision maker, they should complete a risk assessment in support of their application. EPA recommends that a proponent only seeks to vary a recommended separation distance for odour if a risk assessment determines that an alternate separation distance is appropriate, based on the factors detailed in the decision-making process (Figures 5 and 6) and the relevant EPA guidance for assessing odour (EPA publication 1883).

To seek a variation of a recommended separation distance, the proponent should:

- provide the decision-maker with a risk assessment that details the factors and risks associated with the odour source
- based on the findings of the risk assessment, propose an alternative separation distance
- based on the factors outlined in this section, demonstrate that the proposed separation distance poses a low risk of odour impact.

Depending on the factors identified in the risk assessment, the proponent may be recommended to engage a suitably qualified environmental consultant to do further work to demonstrate that an alternate separation distance is possible and appropriate.

Evidence that the proposed separation distance poses a low risk of odour may include an assessment of the presence, intensity, duration and frequency of odour at the sensitive land use. EPA expects applications to include site-specific data where possible. Tools that utilise observational/empirical data are generally of higher value than theoretical approaches.

The decision to vary a recommended separation distance and the conditions relevant to the development proposal is ultimately up to the decision maker. If the decision maker is unable to decide whether to vary a recommended separation distance after receiving information from the proponent, they may contact EPA for assistance.

5.3. Key assessment factors

EPA recommends 3 key factors to consider when assessing an application to vary a recommended separation distance for odour:

- environmental and site-specific factors
- management practices
- engineered controls.

As the management practices and engineering controls of every source of odour are unique, this Section will only provide a general overview of the environmental and site-specific factors that may influence the appropriate separation distance.

Environmental and site-specific factors that may influence the variation of or determine the acceptability of a recommended separation distance are described below.

5.3.1. Cumulative odour impacts

Cumulative odour impacts refer to odour impacts at a specific sensitive land use from different sources. This guide does not address cumulative odour impacts from multiple sources. Instead, it considers the potential impacts from a single source. Therefore, the agent of change must ensure that all likely odour-generating industries have been identified and considered as part of the overall assessment provided to the decision-maker.

The most common situation is an industrial precinct with several industries close to each other. Those industries are generally related to different activities and will in most circumstances emit odours that have different characteristics. In some instances, industries may be the same type or involve similar processes. In both scenarios, their respective separation distances may overlap, and it will be necessary to conduct an odour risk assessment.

5.3.2. Potential for inter-industry incompatibility

Certain industries are intrinsically incompatible and should not be co-located. This is often the case when industrial uses are near commercial or business uses. These situations are best addressed early in the planning phase to avoid land use conflict later in the development stages.

The reason for incompatibility is often quite particular and should be addressed on a case-by-case basis to ensure that appropriate planning solutions are reached.

Planning authorities should ensure that their strategic land use plans, policies and controls are appropriately framed for managing incompatible inter-industry uses. Designation of sub-precincts that are dedicated to certain industrial activities, within a larger industrial precinct, is an effective way to prevent and manage incompatible industries.

Incompatibility examples

Example one

A proponent is seeking a location to build their new food manufacturing factory. The proponent will need to consider if the location of the food manufacturing factory is in proximity to facilities for the manufacture, production or storage of wastes, or chemical works. Emissions from these uses have the potential to affect food manufacturing processes.

Separation distance guideline

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Example two

A developer proposes establishing a business park near a meatworks factory that consists of an abattoir and a meat rendering plant.

Although the business park's proposed location would meet the recommended separation distance from the meatworks factory, odour exposure from the meatworks factory may affect certain types of uses within the business park.

Depending on the proposed zoning and planning controls, the business park may contain land uses sensitive to odour impacts such as gymnasiums, outdoor eating areas or cafes.

If the odour exposure is significant, this can affect the potential commercial viability of the businesses in the park and place an unreasonable constraint on the meatworks factory.

5.3.3. Interface land uses

Interface land uses are those that can be located within separation distances between industrial land uses and sensitive land uses.

Table 3 provides examples of activities and their suitability as interface land uses. This is not intended to be an exhaustive list of all activities. Other activities not listed should be assessed following the principles contained in this document.

Table 3 Suitable activities as interface land uses within an odour separation distance

Suitability	Land use
To be encouraged	Land uses with minimal sensitivity to odour and dust – agriculture, car parks, emergency services facilities, natural systems, service stations, garden supplies, plant nurseries, veterinary centres.
To be considered (subject to odour/dust risk assessment)	Land uses with potential sensitivity to odour and dust – utilities (except for sewage works) offices, research centres, retail premises, informal outdoor recreation.
To be prevented	Land uses sensitive to odour and dust – including dwellings, hospitals, aged care facilities, education centres, childcare centres, places of worship, corrective institutions.

Note: In assessing suitability, the recommended separation distance for the proposed interface land use – which considers the generation of dust and odour – also needs to be considered.

Note: Specific guidance for uses within odour separation distances for landfills is included in the Landfill buffer guideline (EPA publication 1950).

5.3.4. Land use transition

Land use transition is also a factor to consider in determining whether a recommended separation distance is acceptable. This can include the development of strategic land use plans to transition areas to a new land use, or formal indication that an activity will transition out of an area over a specified timeframe.

5.3.5. Other site-specific factors

The recommended separation distances listed in Table 2 may not be appropriate in some instances due to:

- industries being unusually large and/or complex when compared to other similar operations
- having unique configurations of odour sources or advanced control technologies when compared to other similar operations.

It is the responsibility of the agent of change to identify such situations and provide details that will be considered in an odour risk assessment.

5.3.6. Topography

Topography and surface roughness, such as valleys and hills, are a common factor that may influence the risk of odour impacts.

Incompatibility example

A proposed industrial facility has a recommended separation distance of 1,000 metres, and sensitive land uses are located 1,300 metres from the site.

The proposal meets the recommended separation distance.

The sensitive uses are located down a valley from the proposed facility.

There is a potential for odour plumes emitted from the facility to disperse towards the sensitive land use in the valley, resulting in odour impacts.

The proponent, being the agent of change, engages a suitably qualified environmental consultant to undertake an odour risk assessment and finds that the separation distance of 1,000 metres is not acceptable.

5.3.7. Meteorology

Another common factor that can impact the acceptability of a recommended separation distance is the occurrence of prevailing winds that may influence the risk of odour impacts as they can transport odour plumes towards sensitive receptors. A risk assessment may be recommended to consider the strength and frequency of the wind direction

towards these sensitive receptors to confirm the acceptability of the recommended separation distance or the need for a more suitable distance to protect sensitive receptors.

Incompatibility example

A developer is preparing a proposal for the development of several residential dwellings that are located 600 metres from an existing industrial facility. The recommended separation distance from this facility is 500 metres.

The area experiences frequent strong winds and odour complaints have been received from community members located near the 500-metre separation distance. For the development proposal to continue, the developer needs to better understand the risks of the odour impacts on the proposed sensitive use and engages a suitably qualified environmental consultant to undertake an odour risk assessment.

Although the proposal can meet the recommended separation distance, the odour assessment finds that a separation distance of 600 metres is not acceptable for the following reasons:

- *the prevailing winds are mostly light to moderate in the direction of the sensitive land use from the industry.*
 - *the source of the odour is frequent and continuous, predominantly at ground level.*
-

6. Dust

Dust is a common air pollutant that can result in unsightly soiling of surfaces, create visible plumes and reduce visibility. All of these are amenity impacts that can affect people's wellbeing. Repeated exposure to nuisance levels of dust can negatively affect people's quality of life as it may cause frustration, stress, discomfort or annoyance. Dust can also have adverse effects on human health, particularly for people who already have respiratory conditions, such as asthma.

Dust particles vary in size from coarse (non-inhalable), to fine (inhalable), to very fine (respirable). Coarse dust particles generally only reach as far as the inside of the nose, mouth, or throat. Smaller or fine particles, however, can get much deeper into the sensitive regions of the respiratory tract and lungs. These small dust particles have a greater potential to cause serious harm to human health.

Commonly, particles in airborne dust tend to be coarse or non-respirable and do not pose a serious health threat to the public. However, people with respiratory conditions may experience difficulties. The separation distances in this guideline apply to nuisance dust in this context.

For applications where particulate pollution rather than nuisance dust needs to be assessed or managed refer to [Guidance for assessing and managing air pollution in Victoria](#) (EPA publication 1961).

6.1. Separation distances for dust

Table 4 lists the industries with recommended separation distances for dust as they arise from normal operating conditions. It contains a definition of each activity and, in some cases, information on the throughput or specifications of the activity.

If the activity is a likely dust generator but is not listed in Table 4, a risk assessment should be undertaken by the proponent unless written advice is provided by EPA.

Table 4: Recommended separation distances for dust

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
Agriculture				
Grain and stock feed mill and handling facility	Receiving, storing, fumigating, bagging, transporting and loading grain or stock feed	> 20,000 t/year*	250 m	
Food, beverages and manufacturing				
Flour mill	Production of flour	> 200 t/year	250	
Mining and extractive industry				
Coal handling and storage without mining	Crushing, milling, stockpiling and transferring extracted coal	< 1 t/day or a storage capacity up to 50 t	500	
		> 1 t/day or a storage capacity > 50 t	1,000	
Mine for other minerals	Crushing, screening, stockpiling and conveying of other minerals		250	EPA publication 1961 <i>Guideline for Assessing and Minimising Air Pollution in Victoria</i>
Open-cut coal mine	Harvesting, crushing, screening, stockpiling and conveying of coal		2,000	EPA publication 1961 <i>Guideline for Assessing and Minimising Air Pollution in Victoria</i>
Quarry	Quarrying, crushing, screening, stockpiling and conveying of rock	Without blasting	500	EPA publication 1961 <i>Guideline for Assessing and Minimising Air Pollution in Victoria</i>
		With blasting	500	EPA publication 1961 <i>Guideline for Assessing and Minimising Air Pollution in Victoria</i>
		With respirable crystalline silica	500	EPA publication 1961 <i>Guideline for Assessing and Minimising Air Pollution in Victoria</i>
Miscellaneous manufacturing				
Abrasive blasting	Blasting of metal objects in the open	Wet abrasive cleaning	300	
		Dry abrasive cleaning	500	
	Blast cleaning cabinets	< 5 m ³ in volume or totally enclosed	50	

Industry/activity type	Activity/definition	Scale and description	Recommended separation distance (m)	Further guidelines, references and exceptions
		> 5 m ³ in volume	100	
Non-metallic mineral products				
Cement clinker grinding	Grinding of cement clinker, clays or limestone materials	< 150,000 t/year	250	
		> 150,000 t/year	500	
Concrete and stone article manufacture	Production of finished concrete or stone products	> 5,000 t/year	100	
Concrete plant	Production of concrete	> 5,000 t/year	100	<i>Planning guidance for concrete batching (EPA publication 1751)</i>
Glass, glass products and rock wool manufacturing	Manufacturing glass, glass products, glass wool or rock wool		500	
Plaster and plaster article manufacture	Production of finished plaster products	> 5,000 t/year	100	
Waste management				
Landfill			See further guidelines	<i>See Landfill buffer guideline (EPA publication 1950)</i>
Materials recovery and recycling facility	Collecting, dismantling, treating, processing, storing, recycling, or selling used or surplus materials		250	
Transfer station	Collecting, consolidating, temporarily storing, sorting or recovering refuse or used materials before transfer for disposal or use elsewhere		250	
Wood, wood products and furniture				
Sawmill	Sawing, milling, chipping, debarking and hogging		500	
	Handling, cutting and processing logs into timber, including timber drying/seasoning		200	

Note: *t = tonnes

Note: The separation distances listed in this guideline are not applicable to the processing area for tunnel boring machine spoil. The Environment Protection Regulations 2021 provide that EPA must not grant a permission under the Environment Protection Act 2017 for this activity if the boundary of the processing area is less than a certain distance from a sensitive land use.

6.2. Variation of recommended separation distances for dust

If a proponent wishes to seek a variation of a recommended separation distance for dust from a decision maker, they should complete a risk assessment in support of their application. EPA recommends a proponent only seek to vary a recommended separation distance for dust if a risk assessment determines that an alternate separation distance is appropriate, based on the factors in [Guidance for assessing nuisance dust](#) (EPA publication 1943).

To seek a variation of a recommended separation distance, the proponent should:

- provide the decision maker with a risk assessment based on the source, pathway, receptor model, considering cumulative impacts where relevant
- based on the findings of the risk assessment, propose an alternative separation distance
- demonstrate that the proposed separation distance poses a low risk of dust impact.

Depending on the factors identified in the risk assessment, the proponent may be recommended to engage a suitably qualified environmental consultant to do further work to demonstrate that an alternate separation distance is possible and appropriate.

Evidence that the proposed separation distance poses a low risk of harm from dust may include an assessment of the size of the dust source, the type of dust emission, the frequency, intensity and duration of the dust emission and the level of dust control implemented.

If the decision-maker is unable to decide whether to vary a recommended separation distance after receiving additional information they may contact EPA for assistance. The decision to vary a recommended separation distance and the conditions relevant to the development proposal is ultimately up to the decision maker.

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National Guidelines for Beef Cattle Feedlots in Australia Appendix B. – Separation distance guidelines

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Appendix A: Planning context

Planning and Environment Act 1987

The P&E Act establishes the legislative framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians.

Section 4A of the P&E Act provides for the preparation of the Victoria Planning Provisions (VPP), a statewide template for all Victorian planning schemes to ensure that consistent provisions for various matters are maintained across Victoria and that the construction and layout of planning schemes is always the same.

A planning scheme is subordinate legislation which sets out objectives, policies and provisions relating to the use, development, protection and conservation of land in the area to which it applies. A planning scheme regulates the use and development of land through planning provisions to achieve these objectives and policies.

When preparing a planning scheme or planning scheme amendment, the P&E Act requires a planning authority to consider any significant effects this scheme or amendment might have on the environment (Section 12 P&E Act).

Section 60 also requires the responsible authority, before deciding on a planning permit application, to consider any significant effects it considers the use or development may have on the environment or which it considers the environment may have on the use or development. These 'significant effects' include odour and dust emissions as well as landfill gas migration.

Victoria Planning Provisions (VPP)

The VPP ensure a consistent approach to land use planning across Victoria. Several clauses within the VPP refer to the need to separate incompatible land uses, including:

- Clause 13.06-1S (Air quality management) relates to protection of air quality by ensuring, wherever possible, suitable separation between land uses that reduce amenity and sensitive land uses.
- Clause 13.07-1S (Land use compatibility) seeks to protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse offsite impacts. To achieve this, land use separation is included as a relevant strategy.
- Clause 53.10 (Uses and activities with potential adverse impacts) includes a list of uses or activities which if not appropriately designed and located may cause offence or unacceptable risk to the neighbourhood. This clause specifies threshold distances applicable for various industry types.
- Clause 17.03-1S (Industrial land supply), clause 17.03-2S (Sustainable industry) and clause 17.03-3S (State significant industrial land) deal with industry operation and availability of land for industry. These clauses include strategies to ensure appropriate buffer areas can be provided to sensitive land uses and to protect industrial uses from encroachment of sensitive land uses which would adversely affect the industry's viability.
- Clause 44.08 Buffer Area Overlay is a tool that can be used to identify areas where there is the potential for offsite impacts on safety and human health or significant offsite impacts on amenity.
- Clause 65.01 requires that, before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate, the effect on the environment, human health and amenity of the area.
- Clause 66 sets out the kinds of applications that must be referred under section 55 of the P&E Act, or for which notice must be given under section 52(1)(c). EPA is a determining referral authority for a range of planning applications, including any proposal for land use or development that requires approval and licensing under the EP Act.
- Clause 66.02-7 requires any proposal to use land for an industry, utility installation or warehouse for a purpose listed in clause 53.10, with no threshold distance specified or if the threshold distance is not to be met, to be referred to EPA under section 55 of the P&E Act as a determining referral authority. These circumstances indicate that an increased level of assessment is required, hence the statutory referral to EPA.

Appendix B: Separation distances for odour emissions from wastewater treatment plants

Wastewater treatment plants are linked to the size of the population that they serve. Generally, if the population the infrastructure serves grows, the size of the separation distance will need to increase. The exception to this is if the treatment process is upgraded, for example from the use of facultative ponds to an aerobic pondage system.

The recommended separation distance for wastewater treatment plants should be determined in consultation with EPA. Flow and pollutant (organic and nutrient) load, wind regimes, topography, waste-loading, treatment/disposal methods and design capacity should be considered.

The equations and distances shown in Table 5 should be used when considering proposals for new and existing wastewater treatment plants.

Table 5: Recommended separation distances for wastewater treatment plants

Type of installation	Separation distance in m (n = equivalent population) ³
Mechanical/biological wastewater plants	= $10n^{1/3}$
Aerobic pondage systems (designed for wastewater treatment, not for storage of treated effluent)	= $5n^{1/2}$
Facultative ponds	= $10n^{1/2}$
Disposal areas for secondary treated effluent by spray irrigation	200
Disposal areas for secondary treated effluent by flood irrigation	50

Example of how to use this table:

What is the recommended separation distance for an aerobic pondage system serving an equivalent population of 10,000 people?

$$\text{Distance} = 5n^{1/2} \text{ (where } n=10,000\text{)}$$

$$\text{Distance} = 5 \times (10,000)^{1/2}$$

$$\text{Separation distance} = 500 \text{ m}$$

Appendix C: Separation distances for composting facilities

[Designing, constructing and operating composting facilities](#) (EPA publication 1588) is the main point of reference for composting applications requiring EPA approval except where separation distances as identified in Table 6 apply. EPA is preparing planning guidance on assessing an application for a composting facility. It will provide information for smaller facilities not requiring EPA approval. Although composting facilities will emit nuisance dust, odour is the determining factor for separation distances.

Publication 1588 provides examples of separation distances for 2 types of composting facilities. The separation distances in this Appendix cover a larger range of technologies and are based on feedstocks, process design and site

³ Equivalent population is defined in terms of the biological oxygen demand on the wastewater being treated, one-person equivalent is eq

- *Code of practice for small wastewater treatment plants* (EPA publication 500), which states a typical biological oxygen demand (BOD) load of 50 g BOD/person/day, to be followed for plants receiving trade waste as well as sewage.
- *Code of practice onsite wastewater management* (EPA publication 891) Table 4 suggests an organic material loading rate of 60 g BOD/person/day. To be applied to industries that operate their own wastewater treatment plant.

capacity. Table 6 provides a list of separation distances for composting facilities based on feedstock, technology used, and the amount of material processed each year. This does not apply to agricultural/on-farm composting.

The technology listed is the recommended minimum technology appropriate to handle the waste type it is listed against. Where a separation distance cannot be achieved, a higher-order technology is recommended. For example, if the technology from reference facility 3 was used to process low-risk feedstocks, it would have the separation distances quoted for reference facility 3 and require the shorter separation distance than reference facility 1.

Table 6: Recommended separation distances for reference composting facilities

No.	Types of feedstock acceptable (See Publication 1588)	Technology	Size of the plant (tonnes/year)	Recommended separation distance (metres)
1	Lowest risk wastes	<ul style="list-style-type: none"> Suitable control of site access and organic waste deliveries to the site Open air receipt Open turned windrow composting Open air maturation 	1,200	400
			5,000	650
			12,000	1,100
			20,000	1,500
			36,000	2,000
			50,000	2,200
			> 50,000	Case by case
2	Up to medium risk waste	<ul style="list-style-type: none"> Suitable control of site access and organic waste deliveries to the site Dedicated area for receiving incoming wastes that is managed to control for odour and vector risks Outdoor covered windrow composting with forced aeration and with suitable semi-permeable covers for achievement of odour control and physical exclusion of vectors Suitable infrastructure and system for collection and management of putrescible leachate Forced aeration Open air maturation 	1,200	400
			5,000	600
			12,000	850
			20,000	1,100
			36,000	1,400
			50,000	1,600
			> 50,000	Case by case
3	Up to high-risk wastes	<ul style="list-style-type: none"> Suitable control of site access and organic waste deliveries to the site Receipt directly to processing bunkers Outdoor covered windrows/batches in bunkers for composting, with suitable semi-permeable covers for achievement of odour control and physical exclusion of vectors, (e.g., PTFE semi-permeable covers) Forced aeration composting with automated control of aeration to 	1,200	200
			5,000	400
			12,000	600
			20,000	750
			36,000	950
			50,000	1,000

No.	Types of feedstock acceptable (See Publication 1588)	Technology	Size of the plant (tonnes/year)	Recommended separation distance (metres)
		maintain aerobic composting conditions in each composting batch	> 50,000	Case by case
		<ul style="list-style-type: none"> Suitable infrastructure and system for collection and management of putrescible leachate Open air maturation 		
4	Up to highest-risk wastes	<ul style="list-style-type: none"> Suitable control of site access and organic waste deliveries to the site Under cover receipt with leachate management and loading into enclosed composting vessels immediately/without delay Forced aeration composting in enclosed composting vessels with automated control of aeration to maintain aerobic conditions in each composting batch Suitable infrastructure and system for collection and management of putrescible leachate Maturation under cover Secondary odour capture, and treatment equipment and controls during receipt and pasteurisation and undercover maturation. 	1,200 5,000 12,000 20,000 36,000 50,000 > 50,000	200 350 430 500 550 600 Case by case

Note: The technology descriptors in Table 6 state the minimum required odour management technology for alignment with associated separation distances. These descriptors do not indicate conformance with requirements for pasteurisation or other performance standards for composting facilities. Associated performance standards are documented in Sections 6 and 7 of EPA Publication 1588 Designing, constructing and operating composting facilities.

Appendix D: Land use definitions

Table 7: Land use definitions

Land use	Definition
Industrial land use	Any land that is used for or is identified in a planning scheme or through a planning permit as being suitable for, industrial uses/activities listed in Tables 2 and 4 of this guideline.
Sensitive land use in the context of odour and dust emissions	<p>Any land use that requires a focus on protecting human health and wellbeing, local amenity and aesthetic enjoyment.</p> <p>Examples* of such sensitive land uses include, but are not limited to:</p> <ul style="list-style-type: none"> • dwellings and private open space (including detached dwellings, multiple dwellings, flat/apartment buildings, row dwellings and semi-detached dwellings, and excluding dwellings on properties in the same ownership in the Farming Zone) • accommodation (excluding caretaker's residence, rural worker accommodation and dwellings on properties in the same ownership in the Farming Zone) • child care centres • education centres • informal outdoor recreation that is adjacent to residential zones • camping and caravan parks • indoor recreation facility • medical centres • hospitals • residential aged care facilities and retirement villages • outdoor recreation facilities, open sports grounds, (regular public use, for example, sporting fields) adjacent to residential zones.

*Note: Examples are based on the land use terms defined in Clause 73.03 (land use terms) of the VPP. If the terms in the VPP do not correspond with this list, contact EPA for advice. For this guideline, the term sensitive land use includes sensitive receptors.

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Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne